

Using resonance theory as an approach to analyse implementation processes of nursing technology

Ronny Klawunn, M. Sc.¹, Dorina Sieker, B. A.², Prof. Dr. Marie-Luise Dierks¹

¹ Institute of Epidemiology, Social Medicine, and Health System Research, Hannover Medical School, Hanover, Germany

² Department of Nursing Science, Hannover Medical School, Hanover, Germany



Medizinische Hochschule Hannover



Pflegepraxiszentrum Hannover

Background

- Assistive nursing technology become more available to support nurses and improve patient care
- We need to know more about how new technology impacts everyday care and how users interact with new technologies in nursing

Objective and Aim

- Resonance theory could be beneficial as a subject-oriented approach to analyse technology impact¹
- Using resonance theory, we analyse two case studies of implemented nursing technology to characterise technology use and reasons for success/failure

Research Project

- Centre of Implementing Nursing Care Innovations²
- Aim is implementation and evaluation of new technologies in nursing care
- Research project station is a trauma surgery ward in German university hospital

Methods

- Participant observation at the project station (passive, focused); data are recorded in field notes
- Since July 2020, ~40 h observed time
- Analysis via (I) qualitative, evaluative content analysis³ and (II) outlines of resonance theory

Outlines of Resonance Theory

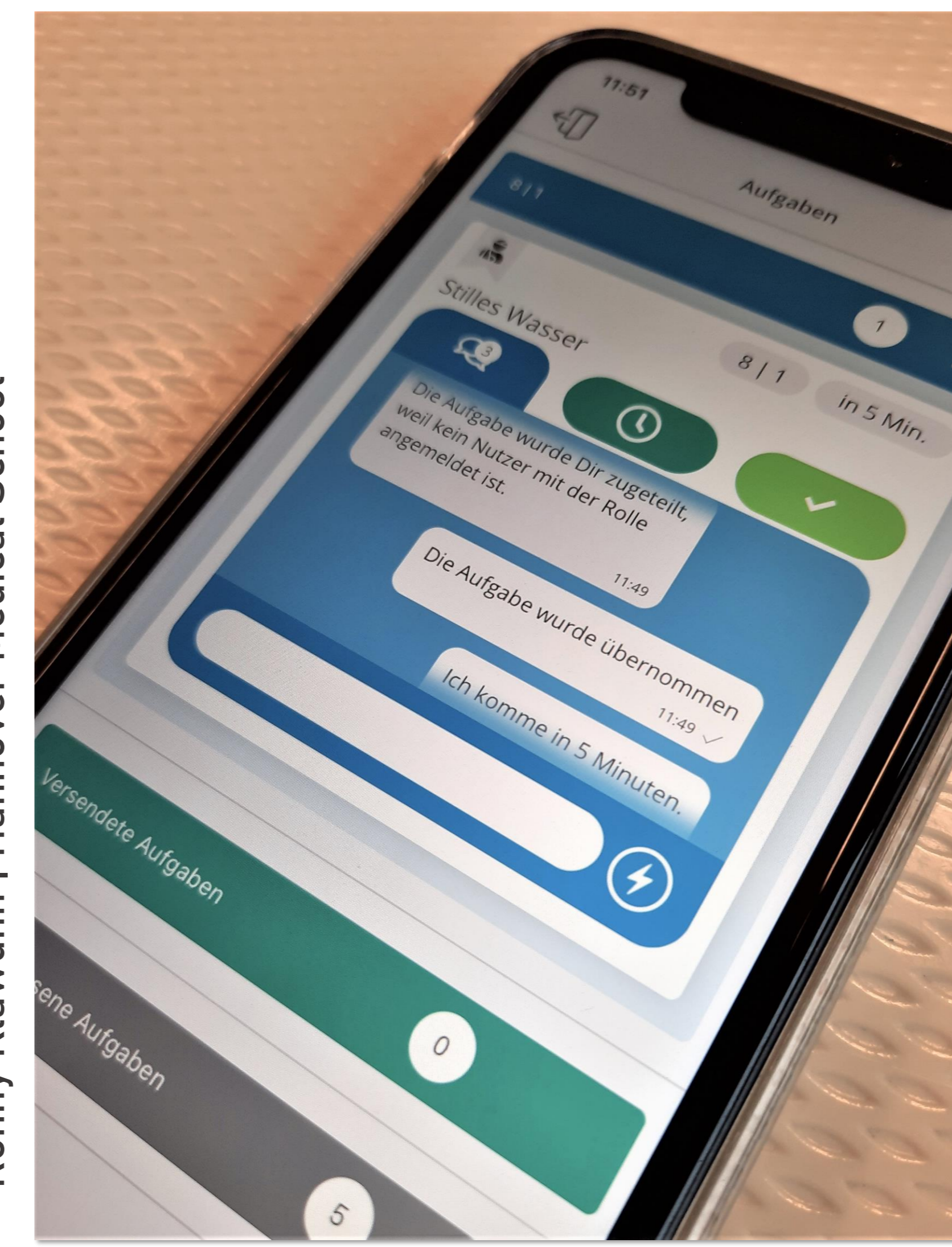
- Theory by German sociologist Hartmut Rosa; quality of relations of people to others or their environment depends on how people are connected (resonance) or disconnected (alienation) to their surrounding⁴.
- Resonance experience in nursing technology is given, if technology supports nurses to manage work demands and fosters good (responsive) patients relations

Case 1 - Repositioning Mattress

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|------------|--|
| Technology | <ul style="list-style-type: none"> Active Mobilization System by Compliant Concept⁵ Mattress system to prevent or treat pressure ulcers Automated and adjustable to patient' needs |
| | <ul style="list-style-type: none"> Observations show extensive use of multiple systems on the ward Nurses experience physical and organizational relief, consider mobilization as reliable Patients report better quality of sleep; in individual cases discomfort occurs; patients may (unintentionally) deactivate system |
| Results | <ul style="list-style-type: none"> System supports nurses and patients while not impacting their responsive relationship |
| Discussion | <ul style="list-style-type: none"> Despite problems during use, e. g. lack of patient adherence, nurses transfer the system into everyday practice |
| | <ul style="list-style-type: none"> The system can be used in a resonance-promoting way |



Repositioning mattress Active Mobilization System © Ronny Klawunn | Hannover Medical School



Communication app CliniServe © Ronny Klawunn | Hannover Medical School

Case 2 - Communication App

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|------------|--|
| Technology | <ul style="list-style-type: none"> CliniServe Care digital task management system by CliniServe⁶ Enables precise nurses-patient communication via enhanced messenger functions |
| | <ul style="list-style-type: none"> Observations show that app was used for several months following its implementation, however sustainable use did not appear Perceived supporting effects could be identified: quick communication with patients, reduced walking distances, task prioritization |
| Results | <ul style="list-style-type: none"> Compared to mattress, fewer conflicts were identified for the app (e. G. no malfunctions) |
| Discussion | <ul style="list-style-type: none"> However, the app was not transferred to routine practice Nurses doubt apps' practical benefits and ability of patient to operate the app, some refuse to work with a smartphone |
| | <ul style="list-style-type: none"> Nurses did not find a resonant use mode for the app |

Conclusion

Technology can provide support for nurses and patients in care delivery if they find a meaningful, i. e. resonant, mode of use. Resonance theory can explain why some (resonance-promoting) technology is transferred into everyday practice, while others are rejected.

Contact | Ronny Klawunn, klawunn.ronny@mh-hannover.de

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Funded by



Federal Ministry of Education and Research